REMARKS

Claims 1-6 are pending. Claims 2-4 and 6 have been withdrawn from consideration by the Examiner for being directed to non-elected subject matter. By this Amendment, Claim 1 is amended. Support for the amendments to Claim 1 can be found at least in paragraph [0015] of the application as originally filed. Applicants respectfully submit that no new matter is presented herein.

Claim Rejection -- 35 U.S.C. §103

Claims 1 and 5 are rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent Number 4,538,645 to Perach in view of United States Patent Number 4,606,705 to Parekh. Applicants respectfully traverse the rejection for at least the following reason(s).

Claim 1 recites a capacity control valve that includes a solenoid portion; a tube placed in the solenoid portion; a movable core, wherein the moveable core forms a slide surface and a non-contact surface on an outer diameter surface thereof, wherein the slide surface is fitted to the tube, wherein a diameter of the non-contact surface is formed smaller than a diameter of the slide surface, wherein an axial length of the slide surface is shorter than an axial length of the non-contact surface; a solenoid rod portion coupled to the movable core and which forms an abutting surface on a free end portion of the solenoid rod portion placed opposite to the movable core; a fixed core which defines an inner bore and is placed in an opposing manner against the movable core, the inner bore loosely fitted to the solenoid rod portion; and an actuation rod having a joint portion and a valve body, the joint portion being engaged with the abutting surface of the solenoid rod portion, the valve body opening or closing a control fluid passage

hole; wherein either one of the joint surface of the solenoid rod portion and the abutting face of the actuation rod has a concave cone-shape surface while the other has a convex cone-shape portion, wherein the solenoid rod portion and the actuation rod are separate members that abut against each other, and wherein the concave cone-shape surface abutting against the convex cone-shape portion provides secure retainment and is free of any fluctuation as the actuation rod securely holds the free end portion of the solenoid rod portion, which is connected to the movable core.

According to the invention recited by Claim 1, the slide surface formed on the outer circumference of the movable core, which undergoes a relative slide movement against the inner diameter surface of the tube formed in the solenoid portion, has an axial length that is shorter than the axial length of a non-contact diameter surface. As such, the above noted structural configuration provides an advantage of decreasing a slide friction of the movable core during actuation because of a reduced sliding contact area formed between the movable core and the solenoid rod portion.

Further, any slide friction of the solenoid rod portion is decreased as the solenoid rod portion slides because the solenoid rod portion is put in a non-contact state relative to the inner bore, which is formed in the fixed core. The solenoid rod portion and the actuation rod portion abut against each other in such a way that abutting a concave cone surface against a convex cone surface enables a secure retainment, and no fluctuations of the solenoid rod portion are caused because the actuation rod holds the free end portion of the solenoid rod portion, which is connected to the movable core. Therefore, contacting the slide surface of the movable core alone provides a benefit of decreasing the slide friction under a slide movement.

Also, as the convex cone-shape portion of the actuation rod abuts against the concave cone-shape portion of the solenoid rod portion, the free end portion of the solenoid rod portion is well supported under the actuation so that any friction increase during the movement of the movable core is prevented, which permits the actuation rod to operate smoothly. As a consequence, the response of the valve body in opening and closing actions in accordance with an electric current given to the solenoid portion is improved and high accuracy control is achieved.

Applicants respectfully submit that Perach and Parekh, alone or in combination, fail to teach or suggest each and every feature recited by Claim 1.

For example, as noted by the Office Action, Perach merely discloses a capacity control valve having a solenoid portion (122), a tube (138), a movable core (128), a solenoid rod portion (174), a fixed core (146), and an actuation rod (below 90). However, the movable core (128) does not have a slide surface. Moreover, a surface (97) of Perach has a gap (Gr') which clearly indicates that the surface (97) is not a slide surface (see column column 5, lines 2-6 of Perach). Moreover, the solenoid rod portion (174) and the actuation rod (below 90) are not separate members.

Parekh merely teaches a compressor control valve having a convex cone-shape portion (34). However, Parekh does not teach or suggest a capacity control valve having a solenoid portion, a tube, a movable core, a solenoid rod portion, a fixed core, and an actuation rod. In view of the above, Applicants respectfully submit that Parekh does not cure or otherwise address the deficiencies of Perach.

Applicants respectfully submit Perach and Parekh, alone or in combination, do not teach or suggest each and every feature of the rejected claims. Accordingly,

Applicants respectfully submit that Claim 1 is not rendered obvious in view of Parech and Parekh, and should be deemed allowable.

Claim 5 depends from Claim 1. It is respectfully submitted that this dependent claim be deemed allowable for at least the same reasons Claim 1 is allowable, as well as for the additional subject matter recited therein.

Applicants respectfully request withdrawal of the rejection.

Rejoinder of Withdrawn Claims

Applicants respectfully point out that the Response dated November 20, 2009 noted Claims 1 and 4 are generic and that upon the allowance of either of the generic claims, Applicants would request rejoinder of withdrawn Claims 2-4 and 6. Accordingly, upon the allowance of Claim 1, Applicants respectfully request the rejoinder of Claims 2-4 and 6 as is provided under 37 C.F.R. §1.141.

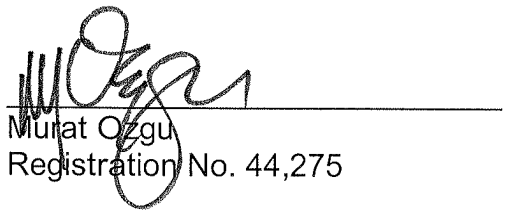
Conclusion

In view of the foregoing, Applicants respectfully request reconsideration of the application, withdrawal of the outstanding rejection, rejoinder of withdrawn Claims 2-4 and 6, allowance of Claims 1 and 5, and the prompt issuance of a Notice of Allowability.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing attorney docket number 108179-00056**.

Respectfully submitted,



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